

Assessment of Written Communication and Critical Thinking at BYU–Hawaii

Winter 2020 Results Summary by the Office of Institutional Research

Assessment results for Written Communication in winter 2020 nudged higher than those from the Written Communication assessment completed in winter 2016-17.



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Artifacts at both the sophomore and senior levels received a majority of scores at the “developed” stage or higher for all criteria as the separation between sophomores and seniors narrows.

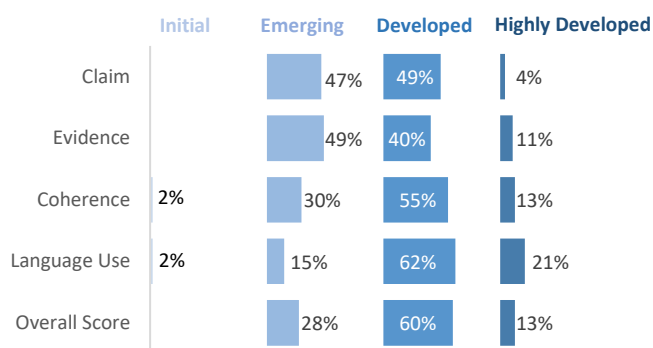
As shown in Chart 1, the largest proportions of artifacts at both the sophomore and senior levels were at the “developed” stage or higher for all criteria. In addition, the majority of artifacts at both the sophomore and senior levels for Overall Score were at the “developed” stage or higher.

Artifacts at the senior level had a higher proportion at the “developed” or “highly developed” stages than those at the sophomore level for the criteria of Claim and Evidence, while the converse was true for Coherence and Language Use. However, a comparison of means between these groups showed the only significant difference between levels was for Claim, where senior level artifacts scored higher than those at the sophomore level ($p < .05$) with a medium effect size ($d = .51$). There were no statistical differences between males and females at any level.

Analysis of Variance (ANOVA) conducted between home area, ethnicity, and faculty units within their respective levels (sophomore and senior) show there were no statistical differences of note for any of these groups at the sophomore level. At the senior level, students from Hawaii scored higher than students from Other International countries ($p < .01$) and the Pacific ($p < .05$) for Claim; while students from Asia scored higher than students from Other International countries for Claim ($p < .01$). Senior students from Hawaii also scored higher than those from Asia ($p < .01$), the Pacific ($p < .05$) and Other International countries ($p < .05$) for Language Use. In addition, students with majors in the Math & Computing faculty group scored higher than those in Education & Social Work for Evidence ($p < .05$). See mean scores on page 5.

Chart 1: A majority of sophomores and seniors are at the “developed” stage or higher for all criteria

Sophomore Level ENGL 101 (N=47)



Senior Level ENGL 315/316 (N=46)

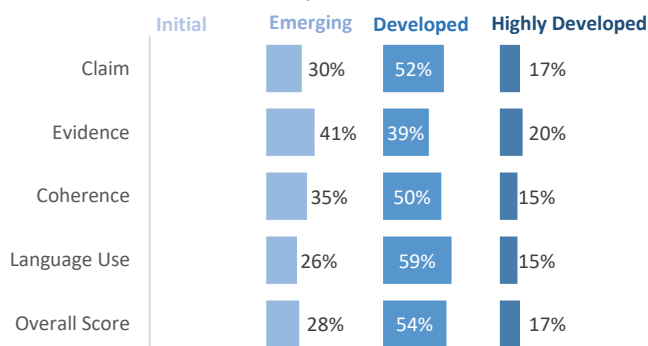
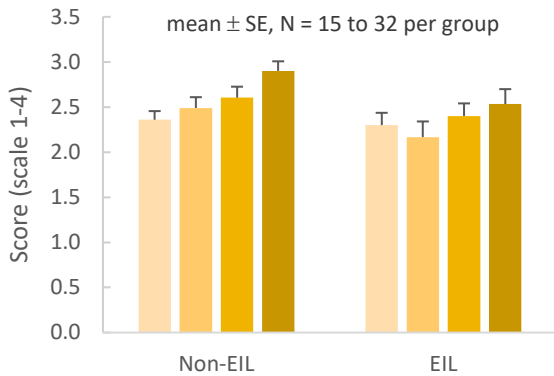
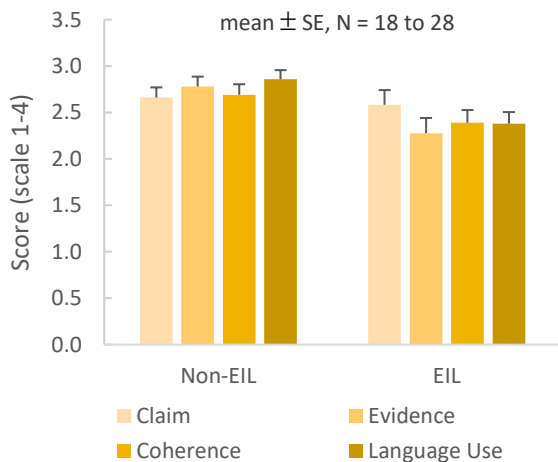


Chart 2: Comparison of Written Communication criteria at sophomore and senior levels

Sophomore Level ENGL 101



Senior Level ENGL 315/316



There continues to be wider statistical difference between papers written by EIL students and non-EIL students at the senior level compared to the sophomore level.

The winter 2020 assessment included the largest number of sophomore level artifacts to date; and for the first time there were no significant differences between EIL and non-EIL papers at this level for any of the criterion.

At the senior level, non-EIL students scored significantly higher than EIL students for Evidence ($p < .01$) with large effect size ($d = .82$), and for Language Use ($p < .01$) with large effect size ($d = .91$).

Inter-Rater Reliability appears to have generally improved in 2020 over 2016-17, especially for the areas of Coherence and Language Use.

Inter-Rater reliability is calculated using a discrepancy index as shown in Table 1.1. Overall, exact agreement in the areas of Coherence and Language Use improved in 2020 over 2016-17 levels. While exact agreement between readers remained below 50% for all criteria, the level of exact and adjacent agreement combined is at an acceptable level near 90% .

Rater pairs who evaluated Sophomore level artifacts showed the highest agreement for Claim and Language Use, and lowest for Evidence. Correlation between reader pairs varied by criteria. Table 1.2 shows the strength of the relationship between reader ratings were moderately positive or weak for all criteria.

Rater pairs who evaluated Senior level artifacts showed the highest agreement for Coherence, and lowest for Claim and Language Use. Correlation between reader pairs varied by criteria. Table 1.3 shows one reader pair with one fairly strong positive relationship, while the remaining included several moderately positive and several weak relationships.

Table 1.1: Discrepancy Index Overall

	DISCREPANCY OF			
	0	1	2	3
Claim	44%	47%	9%	0%
Evidence	46%	43%	10%	1%
Coherence	44%	47%	9%	0%
Language Use	46%	45%	9%	0%

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Table 1.2: Rater Correlation at Sophomore Level

CORRELATION BETWEEN RATERS FOR ENG 101				
	CLAIM	EVIDENCE	COHERENCE	LANGUAGE USE
Pair 1	0.06	0.39	0.30	0.13
Pair 2	0.30	0.46	0.56	0.59
Pair 3	0.39	0.70	0.24	0.61

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Table 1.3: Rater Correlation at Senior Level

CORRELATION BETWEEN RATERS FOR ENG 315/316				
	CLAIM	EVIDENCE	COHERENCE	LANGUAGE USE
Pair 5	-0.13	0.56	0.42	0.33
Pair 6	0.79	0.26	0.59	0.60
Pair 7	0.29	0.38	0.44	-0.26

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Methodology

The method for selecting artifacts in the winter 2020 assessment was changed based on past experience.

There was a deliberate increase in the number of sophomore level artifacts in 2020 because previous assessment rounds could attribute small sample size at the sophomore level for some of the results. In addition, changes to BYUH General Education curriculum required a change in artifact selection at the sophomore level. Where artifacts had previously come from GE 110 and ENGL 201, in winter 2020 the sophomore-level artifacts are solely from ENGL 101.

In previous assessments for Written Communication and Critical Thinking at the senior level, artifacts from capstone courses BIOL 494, CHEM 494, and HIST 490 were included along with the majority of artifacts coming from ENGL 315/16. Faculty raters observed that the artifacts coming from outside of English were very different types of assignments and made it very difficult to apply the rubric evenly. For this reason, the winter 2020 artifacts for senior level come solely from ENGL 315/316.

The faculty group for Written Communication and Critical Thinking followed the same procedure as before where they held a calibration session before the full norming session. During the norming session two separate readers rated each paper and where there was disagreement greater than one whole point on any of the criteria a third reader was employed. The final score is found by taking the average of all readers.

Sample and Representativeness

The sample and population proportions listed in Table 2 show that the sample is fairly representative of the population for most demographic categories. The population is based on Fall 2019 degree-seeking enrollment for all demographic groupings except level. Level (sophomore/senior) is based on the proportion of associates (sophomore level) and bachelors (senior level) degrees that were awarded during the 2018-19 academic year.

Table 2: Demographic proportions in the sample fairly well represent those of the population

	SAMPLE N=93	POPULATION N=2974
Gender		
Male	40%	38%
Female	60%	62%
EIL Status		
Enrolled in EIL	35%	39%
Did not enroll in EIL	65%	61%
Ethnicity		
American Indian/Alaska Native	0%	0.4%
Asian	26%	28%
Black	2%	0.4%
Hispanic	2%	2%
Native Hawaiian or Pacific Islander	19%	22%
White	40%	33%
Two or more races	10%	13%
Unknown	1%	0.4%
Home Area		
Asia	26%	27%
Pacific	15%	18%
Hawaii	10%	8%
US Mainland	45%	44%
Other International	4%	3%
Faculty		
Arts & Letters	4%	9%
Business & Government	41%	33%
Culture, Language & Performing Arts	2%	8%
Education & Social Work	19%	16%
Math & Computing	11%	8%
Sciences	16%	21%
Special Programs	0%	1%
Undecided	6%	4%
Level		N=685
Sophomore (Associates)	51%	13%
Senior (Bachelors)	49%	87%

Mean Scores

Mean scores for each criterion and the overall score are listed by demographic variable grouping for sophomores in Table 3 and seniors in Table 4.

Table 3: Mean scores – Sophomores (N=47)

Gender	CLAIM	EVIDENCE	COHERENCE	LANGUAGE USE	OVERALL SCORE
Male	2.32	2.32	2.44	2.75	2.45
Female	2.36	2.43	2.61	2.81	2.55
EIL Status	CLAIM	EVIDENCE	COHERENCE	LANGUAGE USE	OVERALL SCORE
Enrolled in EIL	2.30	2.17	2.40	2.53	2.35
Did not enroll in EIL	2.36	2.49	2.60	2.90	2.59
Ethnicity	CLAIM	EVIDENCE	COHERENCE	LANGUAGE USE	OVERALL SCORE
Asian	2.28	2.11	2.28	2.39	2.26
Black	1.50	1.50	1.00	1.00	1.25
Hispanic	2.25	2.50	2.50	2.25	2.38
Native Hawaiian or Pacific Islander	2.25	2.17	2.65	2.85	2.48
White	2.47	2.64	2.67	3.02	2.70
Two or more races	2.33	2.33	2.47	2.92	2.51
Unknown	2.50	3.50	3.50	3.50	3.25
Home Area	CLAIM	EVIDENCE	COHERENCE	LANGUAGE USE	OVERALL SCORE
Asia	2.28	2.06	2.30	2.44	2.27
Pacific	2.19	2.13	2.44	2.75	2.38
Hawaii	2.00	1.75	2.38	2.88	2.25
US Mainland	2.42	2.65	2.65	2.91	2.66
Other International	3.00	3.00	3.00	2.75	2.94
College	CLAIM	EVIDENCE	COHERENCE	LANGUAGE USE	OVERALL SCORE
Arts & Letters	2.50	2.67	2.50	3.17	2.71
Business & Government	2.31	2.47	2.69	2.76	2.56
Culture, Language & Performing Arts	-	-	-	-	-
Education & Social Work	2.35	2.15	2.40	2.80	2.43
Math & Computing	2.20	2.30	2.33	2.73	2.39
Sciences	2.56	2.46	2.71	2.94	2.67
Special Programs	-	-	-	-	-
Undecided	2.10	2.40	2.30	2.40	2.30

Table 4: Mean scores – Seniors (N=46)

Gender	CLAIM	EVIDENCE	COHERENCE	LANGUAGE USE	OVERALL SCORE
Male	2.70	2.75	2.71	2.78	2.74
Female	2.58	2.48	2.48	2.60	2.54
EIL Status	CLAIM	EVIDENCE	COHERENCE	LANGUAGE USE	OVERALL SCORE
Enrolled in EIL	2.58	2.28	2.39	2.38	2.41
Did not enroll in EIL	2.66	2.78	2.69	2.86	2.75
Ethnicity	CLAIM	EVIDENCE	COHERENCE	LANGUAGE USE	OVERALL SCORE
Asian	2.90	2.40	2.57	2.46	2.58
Black	1.50	2.00	1.50	2.00	1.75
Hispanic	-	-	-	-	-
Native Hawaiian or Pacific Islander	2.50	2.56	2.56	2.75	2.59
White	2.50	2.65	2.62	2.74	2.63
Two or more races	2.83	3.33	2.67	3.33	3.04
Unknown	-	-	-	-	-
Home Area	CLAIM	EVIDENCE	COHERENCE	LANGUAGE USE	OVERALL SCORE
Asia	2.90	2.40	2.57	2.46	2.58
Pacific	2.25	2.25	2.33	2.42	2.31
Hawaii	3.20	3.20	3.10	3.40	3.23
US Mainland	2.50	2.74	2.60	2.81	2.66
Other International	1.50	2.00	1.75	2.00	1.81
College	CLAIM	EVIDENCE	COHERENCE	LANGUAGE USE	OVERALL SCORE
Arts & Letters	3.00	3.50	3.00	3.50	3.25
Business & Government	2.55	2.47	2.52	2.61	2.54
Culture, Language & Performing Arts	2.75	3.25	2.75	3.25	3.00
Education & Social Work	2.48	2.10	2.44	2.44	2.36
Math & Computing	3.03	3.23	2.67	2.90	2.96
Sciences	2.00	2.50	2.50	2.50	2.38
Special Programs	-	-	-	-	-
Undecided	2.50	2.50	2.50	2.50	2.50